



Metcalf Energy Center

Steve Munro
Compliance Project Manager
Systems Assessment & Facility Siting Division
California Energy Commission
1516 Ninth Street, MS-15
Sacramento, CA 95814

January 21, 2005

Re: Metcalf Energy Center (99-AFC-3C), Amendment to Air Compliance Conditions
Responses to Data Request Items #8 & #10

Dear Mr. Munro:

This letter responds to items #8 and #10 from the January 5, 2005, Data Request received from the California Energy Commission. Metcalf Energy Center, LLC provided responses to the other Data Requests in a January 17, 2005 submittal.

Data Requests #8 and #10 are presented below and MEC's responses are inserted in italics and follow each Data Request.

Data Request 8 - Please discuss the proposed daily operation and corresponding emissions of the MEC facility for the presumed worst-case scenario to justify the daily emission limits. The most reasonable worst-case daily operation should include, but is not limited to a combustor-tuning event and maximum operation at 100% load with the duct burners on.

Response: The daily emission limits are unchanged from those in the existing conditions of certification and are based on the calculations shown in Table 8.1A-2, Appendix 8.1A of Supplement C to the AFC. The original table, entitled "Detailed Calculations for Maximum Hourly, Daily and Annual Criteria Pollutant Emissions," has been updated to reflect the proposed new emissions limits for startups and shutdowns. The attached table presents the assumptions and corresponding emissions for reasonable worst-case daily operation, incorporating a combustor-tuning event. This table incorporates the following assumptions:

- Unit 1 turbine undergoes combustor tuning for 6 hours, duct-firing operation for 16 hours, and baseload operation for 2 hours, for a total of 24 hours of operation.
- Unit 2 is in hot start operation for 2 hours following the Unit 1 cold start¹, duct-firing operation for 14 hours, and baseload operation for 2 hours, for a total of 18 hours of operation.

¹ MEC expects that when one unit takes six hours to complete a cold steam turbine startup or combustor tuning event, the second unit will not require more than two hours to complete a hot start.

The emissions data for this most reasonable worst-case daily operation are summarized in the table and demonstrate that the turbines will continue to operate in compliance with the permitted daily emission rates.

We also note that the Background section of the Data Request incorrectly indicates, "it is possible for MEC to exceed the POC daily limit unbeknownst to the operator, or anyone else." In fact, the MEC Data Acquisition System (DAS) for the CEMS will be programmed with two different POC emission factors: one for startup/shutdown and one for normal operation. Therefore, POC emissions will in fact be monitored continuously and it will not be possible for the daily limit to be exceeded without the exceedance being recorded and reported by the CEMS. Continual monitoring of NOx, CO, and POC emissions will ensure that MEC will remain below the Daily Permit Limits for these emissions.

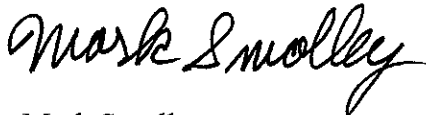
Data Request 10 - Please provide all operational assumptions and corresponding emission calculations to show that the MEC facility emissions of NOx, CO, POC, SOx and PM10 will remain under the current annual emission limits.

Response: The attached table provides a reasonable worst-case annual operating scenario. This table also shows that the Annual Permit Limits will not be exceeded.

As discussed in Data Response 8, continual monitoring of the NOx, CO and POC emissions will ensure that emissions from the MEC turbines will remain below the Annual Permit Limit.

If you have any questions, please contact me at 408 361-4805.

Sincerely,



Mark Smolley
Compliance Manager

Attachment: Detailed Calculations for Maximum Hourly, Daily, and Annual Criteria
Pollutant Emissions – January 21, 2005

cc: Barbara McBride, Calpine
Bob McCaffrey, Calpine
Jeff Harris, Ellison Schneider & Harris

Metcalf Energy Center
Detailed Calculations for Maximum Hourly, Daily and Annual Criteria Pollutant Emissions
21-Jan-05

max. hour	Base Load		Cold Start/Comb Tuning		Startup/Shutdown		NOx			SO ₂		CO			POC			PM ₁₀
	hrs/day	hrs/yr	hrs/day	hrs/yr	hrs/day	hrs/yr	Base Load	Ann Avg	Cold Start/Tune	Startup	lb/hr	Base Load	Cold Start/Tune	Startup	Base Load	Cold Start/Tune	Startup	
Turbine 1, no DB	1	2	6	30	0	520	16.69	12.02	80	80	1.11	24.39	838.0	838.0	2.3	16.0	16.0	9.0
Turbine 2, no DB	0	2	0	30	0	52	16.69	12.02	80	80	1.11	24.39	838.0	838.0	2.3	16.0	16.0	9.0
Turbine 1, w/ DB&PA	0	16	0	0	0	0	19.2	13.82	0	0	1.28	28.07	0	0	2.7	0.0	0.0	12.0
Turbine 2, w/ DB&PA	0	14	0	0	0	0	19.2	13.82	0	0	1.28	28.07	0	0	2.7	0.0	0.0	12.0

Max	NOx		SO ₂		CO		POC		PM ₁₀	
	Max	Total	Max	Total	Max	Total	Max	Total	Max	Total
Turbine 1, no DB	240.0	513.4	1.1	8.9	838.0	5,076.8	16.0	100.7	9.0	72.0
Turbine 2, no DB	0.0	193.4	0.0	4.4	0.0	1,724.6	0.0	36.7	0.0	36.0
Turbine 1, w/ DB	0.0	307.2	0.0	20.5	0.0	449.1	0.0	42.9	0.0	192.0
Turbine 2, w/ DB	0.0	268.8	0.0	17.9	0.0	393.0	0.0	37.5	0.0	168.0
Turbine/HRSG Total	1,282.8	1,233.0	51.7	51.7	838.0	7,643.7	217.7	24.0	488.0	78.48
Permitted Total	1,362.6	1,233.4	57.9	57.9	838.0	7,891.1	230.2	28.0	510.0	83.34

Note: As discussed in the letter dated May 30, 2000 from Sierra Research to BAAQMD submitting comments on the Preliminary Determination of Compliance, MEC reduced its annual NOx emissions cap by 33% below original calculations based on the expected ability to manage the annual NOx emissions budget. Therefore the average NOx emission rate used in calculating annual emissions is approximately 33% below the base load NOx emission rate.